MAY 1958 · 35c

The Johns Hopkins Magazine

JAZZ ON A SPRING AFTERNOON—PAGE 14

She Helped a Burglar make his Getaway

Her home was in a part of the city where anything could happen

WAKING ONE MIDNIGHT, she surprised a burglar in her room. As he leapt for the window, she stopped him. "You'll be hurt. Go down by the stairs and let yourself out."

Calm, kind, and acutely intelligent, she had long ago learned to stay human in emergencies—by living where emergencies were routine, in the heart of one of Chicago's poorest immigrant neighborhoods.

Here she had settled down to her life work—helping people. No sociologist or social worker, she left it for others to make this a science. To her, it was an art. An art she practiced so beautifully that, eventually, while she was loved around Halsted Street, she was admired around the world.

When, in 1935, Jane Addams of Hull House died, her little grandniece, seeing hundreds of children among the mourners, asked, "Are we all Aunt Jane's children?"

In a sense, we all are. For the work Jane Addams did and the lessons she taught still help us all. And they prove magnificently the fact that America's greatest wealth lies in Americans.

It is the character and abilities of her people that make this country strong. And it is these selfsame people who make our nation's Savings Bonds one of the world's finest investments. For in U. S. Savings Bonds your principal is guaranteed safe to any amount—and your interest guaranteed sure—by the government that represents the united strength of 168 million Americans. So for your family's security, buy Savings Bonds. Buy them at your bank or through the Payroll Savings Plan at work. And hold on to them.

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The Johns Hopkins Magazine

VOLUME IX May, 1958 NUMBER 7

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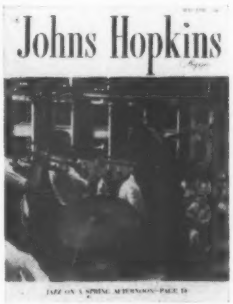
The Cover: If the successors to Noah Webster are correct, the gentlemen on the cover are producing "a type of American music, characterized by melodious themes, subtly syncopated dance rhythms, and varied orchestral coloring." In short, jazz. The musicians are members of a group known as Eli's Chosen Six. They have journeyed from New Haven to Baltimore in order to help the men of Johns Hopkins relax from the pressures of a grueling, pre-examination spring. That they have succeeded in their mission is proved by the pictures on pages 14 and 15.

PHOTOGRAPH BY ALAN J. BEARDEN



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By Thelma S. Nason

'THE ABE LINCOLN OF SCIENCE'

That is one friend's title for Elmer Verner McCollum, who, at 79, is still going strong

At twenty minutes past eight, a tall, elderly man boards the No. 35 bus on a quiet street in Baltimore. Arriving at Walbrook Junction, he transfers to the No. 13 bus; at North Avenue and Charles Street he transfers again; and in another fifteen minutes he is at the Charles Street entrance to Johns Hopkins. A five-minute walk across the Hopkins campus, and by 9:30 he has arrived at his office in Gilman Hall.

Few of the bus passengers noticed him, and none, probably, was aware that a portrait of this man, Elmer Verner McCollum, hangs in the Rochester Medical Museum near paintings of Gorgas (yellow fever), Banting and Best (insulin), Trudeau (tuberculosis), and Long (ether)—men honored for their great contributions to science. Or that he has, at various times in his seventy-nine years, been called Doctor Vitamin, the father of nutrition, and the man who changed the gastronomical habits of the nation. An old friend and partner in research, Dr. Edwards A. Park, refers to him as the "Abe Lincoln of Science."

Dr. McCollum's work both at the University of Wisconsin from 1907 to 1917 and at the Johns Hopkins School of Hygiene and Public Health from 1917 until 1944 has often inspired headline and editorial writers. He was always good copy, and his statements (in which his dry wit was not always discerned) were played up.

HAY, COW'S DELIGHT,
IS BULLY FOR HUMANS,
SAYS HOPKINS SAVANT

said one headline in 1931. "As a substitute for those who do not like hay," the article said, "Dr. McCollum suggested that they drink milk only from cows fed on alfalfa."

An editorial in the New York *Times* in 1934 reported Dr. McCollum's finding that a lack of magnesium in the diet produced nervousness and irritability in rats: " 'I would say,' declared McCollum, 'that you can't have a sweet disposition without magnesium, but that does not prove that you will have one when you take plenty.' "

The Buffalo *Times*, in 1937, headed an indignant letter to the editor, following Dr. McCollum's announcement that inorganic manganese was essential for the proper functioning of the maternal instinct in rats, with this line:

ROUGH ON RATS

"Is McCollum justified in keeping mother rats on manganese-deficient diets to make them refuse to nurse and cuddle their young?" said the letter, over the signature IRATE READER.

Since his retirement at sixty-five, Dr. McCollum has not made the papers as frequently as before, although in 1955 the Baltimore *Sun* reported his selection for a desert isle: "If I were shipwrecked, I'd want to take along a loaf of bread containing one per cent of each: wheat germ, corn germ, dried yeast; and six per cent of skim milk. It's the most nutritious bread in the whole world."

Drawings by Jacob Glushakow

'ABE LINCOLN OF SCIENCE'

Continued

In 1951 *Time*, reporting on a vitamin symposium held in Dr. McCollum's honor at Johns Hopkins, said, "He has done more than any other man to put vitamins back in the nation's bread and milk, to put fruit on American breakfast tables and fresh vegetables and salad greens in the daily diet."

DR. MCCOLLUM'S daily routine has barely slowed since he became professor emeritus fourteen years ago. His new book, *History of Nutrition*, is receiving critical applause. He spent ten years and covered two hundred thousand papers in preparing it, an exhaustive study of the succession of ideas in nutritional investigations from approximately 1740 to 1940. (The latter year, he feels, marks the close of an important era in nutritional research.)

Discussing his work, he mentions a fungus infection on his right index finger, picked up while leafing through old manuscripts. Speaking carefully, he pauses occasionally to clear his throat. His blue eyes, framed by heavy horn-rimmed glasses which conceal a hearing aid, are kindly and sparkling. A thatch of white hair, combed in Will Rogers style, tops a round face which, together with his bearing, suggests simplicity and dignity.

His office since retirement as head of the department of biochemistry, a position he held for twenty-seven years, is in an obscure corridor near the main reading room of the Johns Hopkins library, in Gilman Hall. A former associate says it is typical of Dr. McCollum that he preferred to remove himself, upon retirement, from the environs of the School of Hygiene. "He felt his successor would be more comfortable without McCollum breathing down his neck."

The office is typical of its occupant. Bound volumes of scientific journals—*Chemical Abstracts* dating back to 1907—line the walls. An old desk, a worn but comfortable-looking brown couch, and two gray twist rugs, curling slightly upwards at the edges, are the principal furnishings. The room is filled with gadgets: special reading lights, projecting from the wall; a reading stand supporting a heavy volume on his desk; a home-made contraption, fastened to the typewriter stand, designed to hold notes at a comfortable distance.

An artist who recently spent several hours observing and sketching Dr. McCollum while he worked remarked later that Dr. McCollum's ingenuity and determination to make the best use of his limited vision are impressive. (Since 1950 he has been able to see only with his right eye.) Wearing a green eye shade to soften the light, peering through the lens of a powerful magnifying glass at an 1846 issue of *Lancet*, the British medical journal, Dr. McCollum reminded the artist of St. Jerome in his monastic cubicle.

A LOVE of books and a respect for their contents is a lifelong habit with Dr. McCollum. Graduate students in biochemistry were often surprised and sometimes dismayed to find that after a conference with Dr. McCollum they found themselves in the library rather than the laboratory, doing additional reading and library research. Dr. McCollum has always felt that well-spent time with books often eliminates days of unnecessary experiments in the lab. He encouraged his students to become scholars, in the true sense, not merely students meeting a set of course requirements.

With amusement, he recalls an elementary course in botany which he took while an undergraduate at the University of Kansas. The young instructor, fired with enthusiasm for his subject, proposed to teach the course without using any text or reference books, but simply by observing and discussing plants brought into the classroom and by collecting specimens on field trips. McCollum sat quietly and listened to the instructor glowingly expand on the merits of such a pedagogical approach. After class, he headed for a bookstore, bought two botany textbooks, and diligently studied them, determined to find out what others had already discovered and recorded. Thus fortified, he attended lectures.

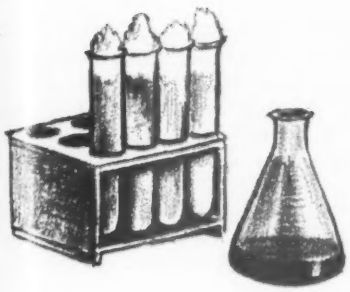
Later in the semester the instructor congratulated McCollum on his aptness as a student of botany. "Said he had never seen anyone perceive the relationship and form in plants the way I did. Never did tell him I got it all out of a book," Dr. McCollum recalls.

TURNING to books has always been the McCollum reaction to new learning situations. As a small boy in the 1880's, growing up on a homesteader's farm in Kansas, he frequently found himself hungering for more information than either his parents or his teachers could give him. The one-room schoolhouse, about a mile from the McCollum farm, housed a jumble of grades and ages. The teacher was only sixteen years old, a neighbor's daughter with little more education than her pupils.

"I remember learning to spell cinnabar and plumbago," Dr. McCollum recalls. "But nobody told us what they meant."

The one-room schoolhouse had its advantages, however. Young McCollum kept himself busy during school hours listening to the lessons and drills of all eight grades. "It was a good thing for me that unsuccessful farmers from elsewhere settled in our area," Dr. McCollum says. "They brought McGuffey's Readers with them, and I used to borrow and read them. I had already gone through the Appleton series used in our school. I read everything I could borrow, instead of doing my lessons." His imagination was stirred by a geography book someone let him see, and as a result there was a period when he dreamed of going to Canada and becoming a fur trapper.

Years later, while doing graduate work at Yale, McCollum's thirst for books began to figure importantly in his maturation as a scientist. Given a key to the private library of Professor



H. L. Wheeler, chairman of organic chemistry, he at once began a program of examining scientific journals. "I would take down in succession the volumes of a series of journals and turn every page, leisurely, until I came upon a title which interested me," Dr. McCollum says. "Then I would read carefully the introduction, in which the writer gave some account of previous investigations bearing on his problem and stated his objective and plan of experiment. I would then examine his experimental data and study the conclusions which he drew from them. Before proceeding further, I would reflect on what I could do in order to shed further light on this problem. I formed reading habits which familiarized me with the manner in which mature men applied themselves to scientific investigations."

READING, for Dr. McCollum, has never been merely a passive process of absorbing and digesting information. Books are his stimulant. As he reads, he meditates, weighs, correlates—and then, perhaps, takes off on a tangent, or perceives a possible relationship between events where none was apparent before. Dr. Park, his collaborator in discovering the anti-rachitic factor in food, Vitamin D, has said that Dr. McCollum is the most "thoughtful" man he has ever known. "I could go to him on any subject—*any* subject—and I would find him informed and suggestive. A very capacious mind with a tremendous fertility of imagination."

This talent for constructive reading and thinking was one he leaned on heavily when he assumed the duties of an instructor of agricultural chemistry at the University of Wisconsin in 1908. Though trained as an organic chemist, his first position was in the alien environment of an agricultural experiment station, supported by a great dairy state, where the emphasis was on bigger and better cows. Despite his Ph.D. from Yale's Sheffield Scientific School and a year's postgraduate work with the great biochemist L. B. Mendel, he remembers he felt like a novitiate in a new order. His change of specialty had been dictated by economics, and Dr. McCollum felt shaky about the whole venture.

Organic chemistry had been his passion since his first acquaintance with the subject in his sophomore year at the University of Kansas. (His previous ambition had been to become a horse and buggy doctor.) During the remainder of his college years, he voluntarily worked after hours in the laboratory, synthesizing compounds described in a German text. His first independent research efforts resulted in a new series of quinoline derivatives. In 1903, he received his B.A., followed by an M.A. the following year.

In 1904, he started graduate work with T. B. Johnson, a noted organic chemist at Yale. One senses a note of disappointment in Dr. McCollum's remembrances of this period: apparently he had hoped to do original work; instead, he was taught how to "cook" pyrimidines. The experience probably shaped his own attitudes toward graduate students in his later career. As Dr. McCollum sees it, the graduate student is essentially an apprentice working under a master to learn his craft. Independent research work should wait until the apprentice has earned his degree.

Two years later, as a fledgling Ph.D., he could find no opening in his specialty. He decided to stay on at Yale for another year to work with Professor Mendel, who taught what was then called physiological chemistry and subsequently relabeled biochemistry. Mendel was the great teacher of a long list of outstanding biochemists of the next generation. It was a profitable year, but still no position opened up in organic chemistry. Having married and feeling the need of a paying job, Dr. McCollum settled for an offer from Wisconsin, where a young man was needed with training in biochemistry and an interest in animal nutrition.

HIS new chief at Wisconsin, Prof. E. B. Hart, had been conducting a novel series of feeding experiments with cows. He divided the animals into three groups and restricted each group to rations derived from a single plant source: wheat, corn, or oats. His aim was to determine which plant is most nourishing.

The experiments had been in progress for about a year when McCollum arrived in Madison. Sharp differentiations among the three groups of cows had already occurred: the wheat-fed cows had fared worst, the corn-fed best. Evidently corn produced a healthy cow with vigorous offspring, oats were somewhat less successful, and wheat produced a small, listless animal, soon blind, and fated to bear a stillborn premature calf. McCollum's assignment was to join the project and unravel the causes for the nutritive differences.

Years later he wrote, "My fitness for planning an experiment in which animals were used might well have been assessed by an experienced man at near zero." His first step, as in the past, was to familiarize himself with the literature in the field. As he read, a sense of dissatisfaction grew. It mounted as he plowed through books and journals repeating the same old formulas and ideas. Much of the work was repetitive, questionable, and, most important, failed to shed any new light on the problems in nutrition. Although contrary evidence kept cropping up, the accepted textbooks taught that proteins, fats, carbohydrates, and mineral salts, combined in a fixed ratio, were the only dietary essentials for both humans and animals, and that these compounds could be assessed in individual feeds and foods by chemical analysis. A method devised by a German back in the 1860's and adopted officially by the American Association of Official Agricultural Chemists in 1884 was still in use when Dr. McCollum entered the field in 1907, despite its marked inadequacies.

PERHAPS it was the influence of Malthusian economics with its pessimistic view of the relationship of man and his food supply. Whatever the reason, in the early 1900's, experi-

'ABE LINCOLN OF SCIENCE'

Continued

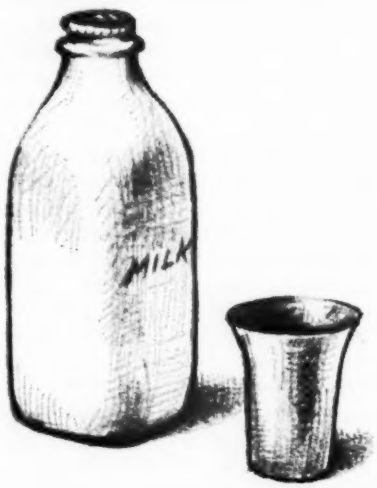
menters were more concerned with the proper feeding of animals than with the feeding of humans. Farm animals were the subjects of numerous nutritional studies, all directed toward one goal: increasing the return from animal husbandry through cheap yet nourishing feeds. Good nutritional practices were equated with increased production of milk, meat, wool, and eggs.

The study of human nutrition was appallingly primitive. W. O. Atwater, the outstanding authority on the subject, had compiled a food chart showing, in Dr. McCollum's words, "how much protein and digestible energy could be bought for twenty-five cents. There were no cautions of any kind. The best buys were cereal flours and meals, beans, peas. The poorest buys were oranges, fresh vegetables, and various non-citrus fruits. Purchasing the water-rich fruits and vegetables was regarded as washing your money down the drain."

Less than fifty years ago, many Americans subsisted mainly on bread, meat, and potatoes, plus sugar and various cereals and beans. This was the popular diet, inexpensive and heavily weighted with proteins and calories. The nutritional trinity—proteins, fats, and carbohydrates—was accepted as the only necessary component of an adequate diet, not only by the public (which probably gave it only passing thought), but by many researchers in the field.

What food to include in the diet was not considered nearly as important as the total caloric intake and digestibility of the average diet. Research was empirical and statistical, rather than experimental. Alabama Negroes, Maine lumbermen, schoolboys, and faculty families were among those carefully surveyed to gather information about the diets and caloric needs of various groups. (It was also in this era, Dr. McCollum recalls with amusement, that home economics courses were concerned primarily with the best ways of washing windows and woodwork.)

The Ladies' Home Journal, an accurate cultural barometer, showed surprisingly little interest in food and the relationship of food and health. Among the many pages devoted to women's fashions and romantic fiction were a few articles on the economics of food preparation: "How I Feed Five on $11 a Week," "How to Cook Cheaper Cuts of Meat," and "My Most Economical Recipes for Family Dinners." Suggestions for the day-to-day planning of healthful meals were noticeably lacking; instead, there was a dire warning in the June, 1910, issue that "those who drink milk at mealtimes are sure to be dyspeptic." Milk, in fact, was not recommended except as a necessary accompaniment to cereal.



Even the advertisements of the period reflect the pseudo-scientific nature of the information circulated among the public. An ad for oats quotes a study of Scottish laborers made by Sir James Crichton-Browne, to the effect that since the Scots are a big-boned, well-developed, mentally energetic race, and since they subsist mainly on oatmeal, oatmeal is of marked value to the brain and to the whole body, "due to the stimulation of the thyroid gland by oatmeal porridge in childhood."

Another advertisement by the same company the following month uses statistics impressively: two thirds of the wayward boys committed to prison schools never ate oatmeal at home; only one in every thirteen inmates of poorhouses came from an oatmeal-eating family; and fewer than two per cent of the prisoners in four state penitentiaries were served oatmeal as children. The reader who scorned oatmeal as a child was left to his own dismal conclusions.

(Dr. McCollum subsequently proved that oatmeal was less nutritious than the other grains because of its low riboflavin content.)

This was the field of nutrition in the early years of the twentieth century—and it did not present an encouraging prospect for McCollum at Wisconsin. Doggedly he continued with his reading program. And at length there was a hint; a clue; a suggestive thought, possibly a promising lead.

McCollum had devoted months to reading Maly's *Jahrebericht über die Fortschritte der Thier-Chemie*, a German yearbook which published in abstract all the literature relating to animal and plant chemistry. Going back to the year 1872, he read volumes one through thirty-seven. In the hundreds of papers reported, he found only thirteen isolated experiments that captured his interest and provoked further speculation. In these experiments, conducted over a number of years by various investigators, animals were fed "purified" rations of the essential nutrients, combined in the proportions considered ideal by the official method. The novelty of the experiments consisted in their abandonment of the use of complete natural foods (their complexity was to be revealed subsequently), substituting rations prepared in the laboratory. The experiments were the first really valid attempts, Dr. McCollum realized, to subject the accepted nutritional dogmas to scientific examination. If the theory behind the investigations was correct, then the animals should thrive on a lab-cooked diet.

But—and this is what excited Dr. McCollum—the animals did not flourish; instead, they fared badly and in many cases died. McCollum then asked himself the critical question: Why is this so? He supplied his own answer: there must be other nutrients contained in food that are vital for life processes but which escape detection by the accepted chemical procedures. He

went one step further: he began to think about possible experiments that might disclose the suspected unknown (or unknowns) and prove its existence. Having perceived a relationship previously unnoted, he brought into play his ability to *project* an experiment: to create an approach which lent itself to laboratory manipulation. In a flash of inspiration, he decided to use rats as his laboratory animals.

Rats, as well as other small animals, previously had been used by investigators, but mainly for anatomical work. No one had ever bred rats in the laboratory under controlled conditions and used successive generations for nutritional experiments. Yet, as small animals with a short life span, rats are ideally suited for such work. They are easily housed in cages, and an investigator can trace effects through a number of generations within a relatively short time.

The simplicity and rationality of the whole experimental scheme made it even more attractive to Dr. McCollum. With proper care and breeding, he could keep constant all factors affecting them, except diet. By varying their diets, starting with the simplest combination of purified rations and proceeding step by step through additions of substances singly and in combinations, *in vivo* determination of the unknown essential nutrients would be possible. The living biological organism, rather than an inanimate test tube, would become the arbiter of his own food requirements. Enthusiastically determined to start the first rat colony in America, McCollum went to see his chief.

Researchers are the chronically curious, McCollum once remarked to a friend. Perhaps that was the only explanation he could offer for his stubborn determination to put his project into effect, despite strong opposition right down the line. Essentially, McCollum is a great experimentalist. He is not content to theorize and speculate. When he gets an idea, he immediately begins to think about how best to carry it out; he does not concern himself with all the possible reasons why it won't work. Instead, he concentrates on *making* it work—primarily because he is eager for the answers a successful experiment will supply.

"He thinks of so many things to try, and he is not stereotyped in his approach," says Aggie Rider, his present research assistant. She adds that, of course, not everything he suggests works. But when it does, it is usually a simple yet ingenious solution which no one else had thought of.

PROFESSOR HART tersely said no when McCollum broached his rat-raising idea in 1908. He told McCollum to forget the whole scheme and to get back to work on the cow experiments. Dr. McCollum says that probably Hart would have fired him, then and there, if he could have found an immediate replacement.

From Dr. Stephen M. Babcock, Hart's predecessor as chairman of the department, McCollum received a much more sympathetic reaction. Babcock promptly made an appointment for McCollum to see the dean of the college. As professor emeritus, Babcock not only was highly respected on the campus, but enjoyed immense prestige among the state legislators, controllers of the university's purse strings. The dean, nevertheless, joined Hart in an emphatic no. Apparently the thought that an agricultural experiment station, dedicated to breeding blue-ribbon cows, would spend the taxpayers' money on raising rats was too shocking to entertain. Besides, he added, the rat is a pest; any experiments involving rats should be directed toward extermination, not perpetuation.

Wise in the ways of authority, Babcock knew how to handle the situation. Unaccompanied by McCollum, he had another talk with Hart and obtained his reluctant consent. McCollum could go ahead with his plan, but quietly. "So far as I know," said Dr. McCollum not long ago, "nothing was said about the matter to the dean, and the undertaking was not made a formal project—a procedure which I am sure is occasionally made good use of, today."

The unofficial status of the project hampered McCollum only temporarily. There were, for instance, no funds for purchasing rats. So, fifty years ago, McCollum got busy setting up rat traps in the University of Wisconsin horse barn. Soon he had enough animals to set to work, but he quickly discovered that wild rats, frightened by their cages, snapped and bit at their captors, making it impossible to handle them. He ended up by ordering a dozen albino rats from a pet dealer in Chicago and paying for them himself.

Funds for the rat project were a continuing source of irritation between Hart and McCollum until the experiments began to justify McCollum's enthusiasm. But the next five years were gratifyingly productive, and McCollum found himself standing at the edge of a revolution in man's entire concept of food—a revolution in which he, himself, was to have the role of leader.

THERE are a number of scientists who believe that McCollum should have received the Nobel Prize for the tremendous scientific contributions he made. Discovery after discovery came pouring out of his Wisconsin laboratory, once he had learned to work with rats. His ten years of experimentation at Wisconsin changed our whole attitude toward food. The folklore and superstitions surrounding food began to evaporate and were replaced by solid, scientific facts.

McCollum was the first man to demonstrate beyond a reasonable doubt the existence of a hitherto unsuspected fat-soluble nutrient, Vitamin A, essential for health and growth. His rats were the living evidence. Those receiving butter fat or egg yolk, in addition to the basic diet, were sleek and fat, in sharp contrast to the stunted rats whose fat supply came instead from olive oil or lard. McCollum concluded that there was an unknown factor in butter fat and egg yolk, not present in other common fats yet essential for normal development. In 1913 he published his

'ABE LINCOLN OF SCIENCE'

Continued

first paper reporting this discovery and, in a few months, his work was confirmed by Mendel, his former professor, and Thomas B. Osborne.

The rats were the actors in a number of dramatic laboratory performances in the next few years. In one experiment, the eyes of the animals, deprived of Vitamin A, would begin to swell and exude a sticky substance. Within two days the eyeball would rupture. However, if the animals received Vitamin A before the rupture took place, the ulcer healed and the eyes returned to normal. A simpler condition in humans, xerophthalmia, has subsequently been identified and treated.

In another experiment, the rats demonstrated the nutritional importance of plant leaves, long ignored as a food source through popular preference for seeds. Rats, sustained solely on such fare as corn, oats, and wheat, were undersized, compared with those fed on a combination of leaf and seed.

The same technique established milk as an invaluable dietary component.

Discussing these fruitful years, Dr. McCollum waves his large hands in a gesture of impatience with himself. As a Kansas farmer, he says, he should have been able to fathom the puzzling results obtained in the original cow-feeding experiments. The answer was so obvious: the wheat-fed cows received grain which had been purchased commercially and therefore had most of the leaf removed in the threshing process, while the cows fed on corn or oats received the leaves of the plants as well as the grain, because these products came directly from the university's farm. "Now we know that the leaf is very nutritive," he says. "But we didn't know it then."

Dr. McCollum's discovery that Vitamin A is present only in certain fats struck a vital blow at the fortress of entrenched doctrine. One of the pillars was demolished: the myth that all fats are of equal nutritive value. Not so.

Further work with the rats soon disclosed that protein sources also vary widely in their nutritive effects, although apparently they have similar chemical structures; that milk has vastly greater nutritional significance than legumes; that glandular organs such as the liver, heart, and kidney contain important nutrients not found in the more popular muscle meats. All of the common cereals have the same nutritional deficiencies; they need to be supplemented by proteins, calcium, salt, and fats containing Vitamin A. Polished rice needs an additional supplement, present in rice polishings or wheat germ, to make it nutritionally complete.

The direct relationship between nutrition and health was no longer in doubt. Observations and experiments by McCollum and others were being collected, sorted out, and put together in a coherent whole. Diseases with unknown causes were now being identified as due to nutritional deficiencies.

Reading a book about beri-beri, Dr. McCollum found confirmation for his experimental observations on polished and unpolished rice. Additional work revealed that the unknown factor in rice polishings and wheat germ, subsequently labeled Vitamin B, was water-soluble and distinguishable from Vitamin A, the fat-soluble vitamin. It took another twenty years of research by many workers to discover that the so-called Vitamin B actually contained a complex of vitamins, including Vitamin B_{12}, a therapeutic agent for pernicious anemia.

The term *vitamin* was originally suggested in 1912 by Casimir Funk, a Polish chemist who, using polished rice, had produced beri-beri in pigeons. He believed in the existence of an unknown nutrient, "essential for life," and he proposed to call it a *vitamine*. In a book published in 1914, Funk suggested that such diseases as scurvy, rickets, pellagra, and beri-beri were directly attributable to vitamin deficiencies.

After years of experimentation with rats, using the biological method he introduced, McCollum had become openly critical of the standard American diet. His radical views on nutrition began to spread beyond the University of Wisconsin campus.

In 1914, he was invited to address a woman's club in Madison. It was an exciting afternoon, both for the lecturer and his audience. He informed the ladies that their families were being offered inadequate nourishment; his rats could not subsist on such a diet. He stressed the importance of leafy vegetables, fresh fruits, and glandular meats in the daily menu, and extolled the many virtues of milk. His recommendations, subsequently repeated in other lectures and eventually incorporated in *The Newer Knowledge of Nutrition* (1918), became the basis of the *Basic Seven Foodstuffs*, the recommended guide to menu-planning publicized by the U. S. Department of Agriculture.

The immediate aftermath of the lecture was quite different, however, from that which Dr. McCollum experienced in the long run. Returning home after his talk, McCollum received a phone call from the chairman of the university's bacteriology department, who tongue-lashed McCollum for preaching such utter nonsense. "After that," Dr. McCollum says, "whenever we met on the campus, he would stare at me disparagingly. I always felt that he was saying, under his breath, 'You poor fool.'"

Thus opened the Vitamin Era in the United States.

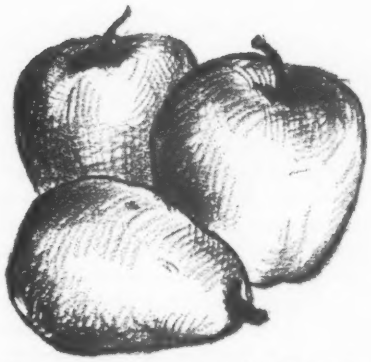
An internist at Johns Hopkins recently commented that he rarely sees a case of vitamin deficiency nowadays; his last one was an eccentric who lived on tea and beans and developed a severe case of scurvy. So many foods are now "enriched" and "fortified" with vitamins that avoiding vitamins in

on form or another is quite a feat. There are milk (four hundred U.S.P. units of Vitamin D are added to every quart), margarine (two ounces supply forty-seven per cent of an adult's minimum daily requirement of Vitamin A and sixty-two per cent of a day's need for Vitamin D), enriched bread (six slices will supply forty-one per cent of the m.d.r. of Vitamin B_1, thirteen per cent of the m.d.r. of Vitamin B_2, thirty per cent of the m.d.r. of iron, and 3.74 milligrams of niacin), and countless cereals, rice, and other foodstuffs that are, in the ad men's phrase, "vitamin-packed." In addition, therapeutic vitamins are packaged and vended as drops, pills, and capsules. In the Hopkins doctor's opinion, a substantial percentage of all vitamins taken orally, nowadays, exceed one's body needs and are subsequently excreted.

Without question, vitamins are big business today, and Dr. McCollum, whose mission in life has been to promote good health through proper eating ("First eat what your body needs, then what you want," is a popular slogan he coined in 1918), is somewhat vexed by the unexpected turn of affairs. In early 1940, he valiantly fought—and lost—the "Bread in Richmond" battle, in which he heatedly opposed government sanction of the label "enriched" for bread that was actually impoverished through processing. Although he favors the refinement of wheat, there is something wrong, in his opinion, with "milling out of wheat thirty or more products, then adding four products and calling the result 'enriched'."

Dr. McCollum has always refused to profit from the commercialization of his findings, although annual vitamin sales run in the millions. Bluntly, he tells a listener that wheat germ and yeast are still the cheapest and best sources of vitamins. A teaspoonful of pure yeast in water every morning, he says, and you're all set.

He is still dissatisfied with the American diet: not enough milk, leafy vegetables, and liver, he says; too many sweets and starches. Vitamin salesmen have gone overboard, he feels: many of them, he says, "are the lineal descendants of the men who used to sell golden elixirs and true Indian remedies." On the latter, he speaks with experience.



His mother was a staunch believer in such tonics and bought Warner's Kidney and Liver Cure from an itinerant medicine man for many years. "I could have filled a bushel basket with the empty brown Warner's bottles that I found around the farm," he says. (Although she always complained of a bad heart, his mother lived until she was ninety-four.)

MENTIONING his mother's favorite medicine—something he apparently hadn't thought about in years—released other memories recently. "This will tell you something about my mother," he said. "She lived in a poorly built stone house which was in imminent danger of collapse for eleven years—and bore four children there."

As Dr. McCollum reminisces, comfortably seated in his desk chair yet never slouching, one realizes that his occasional references to himself as a "Kansas farmer" are not for effect; the Kansas farm boy is still a part of him. Eighty years ago, the frontier influenced American values, and Dr. McCollum's values still belong to that generation.

His speech is a blend of scientific terms, scholarly references, nineteenth-century English (he speaks of someone's "demise"), and rustic expressions ("I should have had the gumption . . ."). He still feels a closeness to nature not often found in a city dweller. Mrs. McCollum says that, next to reading, walking is his favorite pastime. Both McCollums take regular walks after dinner, and two-to-three-mile hikes on weekends and holidays. Once, during a difficult period in his life, Dr. McCollum went off by himself on a five-week walking trip through Glacier National Park.

He resents display and a waste of resources. For many years he refused to travel by Pullman, even when serving on important government missions. Even his clothes for many years looked as though they had walked out of a mail-order catalogue. (They probably did, Mrs. McCollum observes.) Another close associate remembers how wrong his clothes were, for such a big frame—short sleeves, narrow trousers, bad fit: "He never really spent money on himself, and he looked it." Apparently clothes did not interest him, even in his many trips abroad as a delegate to the Health Section of the League of Nations.

Today, however, Dr. McCollum wears well-fitted tweed suits and rakish bow ties. The change was wrought on a memorable day in the summer of 1937. A former graduate student and a close friend remembers that he came in one morning and asked what he should take along for a week-end visit to the Long Island estate of a dairy executive. Afraid that he would turn up with a knee-length bathing suit, his colleagues guided him to a well-known Baltimore haberdasher and tailor. Once there, he was outfitted properly and, recalls the student, "was as pleased as a child at Christmas."

IN Dr. McCollum's boyhood, even the essentials came hard. The life of a family on the open prairie wasn't easy, especially before farm operations were well under way. Teams of oxen were used to "break the prairie," and Dr. McCollum recalls working with his father to clear the land and prepare it for planting. His father, Cornelius Armstrong McCollum, was an unskilled, uneducated man of Scotch descent who had staked a homesteader's claim ten miles west of Fort Scott, Kansas, after being rejected for military service during the Civil War. He met Martha Kidwell, the daughter of another homesteader, at a Fourth of July picnic, and they were married within a few months.

With relish, Dr. McCollum relates his close brush with death as a baby, and how "Mother and I started our experiments in nutrition early." The neighborhood women were convinced that cow's milk for babies meant certain death, although they did not trace the killer to

'ABE LINCOLN OF SCIENCE'

Continued

the dirty barns and unwashed milk containers. For some reason Mrs. McCollum decided, when she weaned her son, to feed him potato soup, made with boiled milk. At ten months, he was a very sick baby. One day, trying to quiet him while fixing an apple pie, she gave him some apple scrapings to chew on; he liked them and grew quieter, so his mother continued to feed him apple scrapings regularly. Within a few days he had recovered from his illness. This was in 1880. Three and a half decades later, the sickness would have been recognized as a nutritional disease stemming from a lack of Vitamin C. In 1916 Dr. Alfred Hess, concerned about an outbreak of infant scurvy, related it to the pasteurization of milk and recommended that fresh fruits, particularly citrus fruits containing ascorbic acid in abundance, be added to infants' diets.

The McCollums were determined that their children would have a better education than they had had. Dr. McCollum's mother, whose only formal training had been two years at a small country school, had a deep respect for education, and his father had a great hunger for it. Dr. McCollum remembers his father as a "quiet, mild-mannered man with an unusual curiosity for a farmer. He wanted to know all sorts of things, but he had nothing to read. If he could have had a copy of a good book on physics, it would have opened his eyes. Anything in the way of curiosity, I inherited from him."

On the recommendation of a traveling preacher, McCollum's three sisters were sent to Lombard University, a small denominational college in Ohio which offered the equivalent of a high-school education. "Personally," says Dr. McCollum, "I think they overdid it." All three girls married ministers, and his sister Effie herself served as minister in a Universalist church in Iowa for fifty-three years.

When Elmer McCollum was eleven, his father, who had been a hard worker, became very ill and was never able to resume physical labor again. Young McCollum had to leave school and fill his father's place on the farm. "It's a long day behind the plow for a boy of eleven," Dr. McCollum recalls, "and so—since I had always had an appetite for poetry—I used to recite poems to myself from Appleton's and McGuffey's. Got to know several hundred pieces that way."

Today, says his wife, you can start him on any line in Shakespeare and he'll finish the speech, then identify the act and scene. Dr. Park was once surprised to find Emily Dickinson's works on his desk. "Do you like poetry?" he asked. "Oh, I love her," Dr. McCollum earnestly replied.

Despite the family's poverty, Mrs. McCollum followed her plans for the children's education. In 1896 the family moved to Lawrence, Kansas, a college town, and at seventeen—tall, thin, and shy—Elmer McCollum entered high school. He was very clear about his goals: to help support his family, and to make a good record at school.

In later years Kathleen, one of Dr. McCollum's five children, remarked, "When I was going to bed, Pa was working; if I'd wake up in the middle of the night, Pa would be working; I'd get up in the morning, and Pa would be working." His capacity for work, sustained by a strong self-discipline, was developed during the eleven years he struggled to acquire an education. His nocturnal work habits were continued at Wisconsin, then at Johns Hopkins. His one self-indulgence during those years was a twenty-five-dollar expenditure for a second-hand copy of the Encyclopedia Britannica while in high school. Read and reread, it was still in his possession when he came to Baltimore in 1917.

His first job in Lawrence was as a newsboy. More money was needed at home, so he became a lamplighter. Usually he had been up for several hours distributing papers on his route before dousing the street lights in the early dawn. His most vivid memories of that period are of his first chemistry book, brought home from college by his sister Cora, and of a very nice girl who became his friend despite his timidity and wrong clothes.

Yale gave him his first introduction to eastern universities. "Go buy yourself a derby," said a friend, after one look at his stiff straw hat. Campus life at Yale was a new and exciting experience. As an undergraduate at the University of Kansas, he had lived at home and had time only for course work, not for the pleasures of college life. He still worked hard at Yale, but life was a little easier. He discovered that tutoring was a lucrative sideline and managed not only to support himself but to send money home. By the time he left Yale, he had saved $1,500.

"The good life," Dr. McCollum remarks, "is when you're tied to an enterprise and have to work hard. When I was doing experimental work, I never felt that I had a job. I was doing something I enjoyed very much."

He needed and welcomed new challenges and thrived on measuring up to them. The ten years at Wisconsin meant excitement and fulfillment: the change in specialty, his rapid ascent to a full professorship in six years, his acquisition of "visibility as a researcher." For similar reasons, he was excited by an invitation, in 1917, to come to Johns Hopkins as chairman of biochemistry at the new School of Hygiene and Public Health. He was ready to move on.

Here was another position for which, technically, he perhaps did not qualify (he had had no experience in public health, no medical training, and no administrative background). He had the satisfaction, again, of organizing his resources to meet a challenge.

In 1917 Dr. McCollum moved his family to Baltimore. The change in environment, from Midwest to the East, was stimulating to him. He remembers with pleasure the lively dinners at which Dr. William Henry Welch, the director of the School, entertained visiting celebrities. Welch made a deep impression on McCollum, who particularly admired his knack for drawing people out and sought to emulate him.

Dr. McCollum's research work benefited from the close contact with medically trained workers. (He still regrets that there wasn't more of it.) In 1922

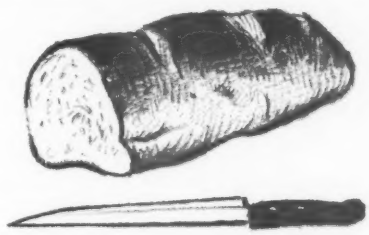
McCollum and his associates, Park, Shipley, and Simmonds, announced the discovery of a new fat-soluble vitamin, abundant in cod-liver oil and a preventive of rickets, which, being the fourth vitamin to be found, was labeled Vitamin D.

In 1927, after a severe case of pneumonia, Dr. McCollum slackened his work pace slightly—by observing a rest hour after lunch, on doctor's orders. He devoted his evenings to new reading interests, history and biography. Plutarch's *Lives* was, and still is, one of his favorites. He continued his middle-of-the-night work sessions, however, preceded and followed by a few hours of sleep.

By then, Dr. McCollum had accepted a new challenge: educating the public to the importance of diet in one's health and well-being. Unlike many of his contemporaries in science, men who also made important scientific contributions but were content to stay within the confines of their laboratories, Dr. McCollum became a scientist with a mission: to spread the gospel about nutrition. In 1923, he said, "The average mortal is unfit to regulate his own appetite. Not only does he not know when to stop eating, but he seldom knows what is good to eat." He directed his energies to doing something about this abysmal ignorance.

World War I and the Hoover food administration ("Food Will Win the War") sent him to the speaker's platform. Wartime food shortages had necessitated a reorganization of the American diet, and Dr. McCollum's new discoveries validated the enforced food economies. After writing a series of bulletins for housewives, he was asked by Herbert Hoover to undertake a speaking tour of the country. Everywhere he spoke—at an overflow meeting in Portland and to capacity audiences in Salt Lake City, Chicago, Philadelphia, San Francisco, San Diego, Denver, and dozens of other places—he found people were interested and impressed by pictures of his rats. The contrast between the well-nourished and the malnourished was sufficient proof of his preachings that milk and green, leafy vegetables are the "protective foods." Wartime exigencies, Dr. McCollum says, undoubtedly speeded the dissemination of his new nutritional findings.

In 1922 an editor of *McCall's* approached Dr. McCollum about doing three articles on nutrition for the columns of that magazine. Another series of his, "What the American Business Man Should Eat," had already appeared in *American Magazine* and brought forth an overwhelming response. Most of the letters were inquiries for more information and required personal answers from Dr. McCollum, and he was reluctant to take



on such a project again. The *McCall's* editor, however, convinced him that her readers were not letter-writers. They bought the magazine for the fashion news and for dress patterns, she said, and if occasionally the thought of writing to an author crossed their minds, they would probably be unable to find paper or pencil. As it turned out, the editor had seriously, to use an expression made popular by *another* woman's magazine, underestimated the power of a woman. The mail was heavy, Dr. McCollum's closest competitor in the fan-mail department being Sophie Kerr, the fiction writer.

The *McCall's* association lasted twenty-five years. Dr. McCollum's monthly columns—"That Marvel, Your Digestion," "The Diet and Halitosis," "Canned Food and the Cooks," and "How to Lose Weight" were some of the titles—always emphasized the basic principles of nutrition and health. They exposed quackery and fads and were packed with information and simple explanations of laboratory findings.

A number of newspapers began to reprint excerpts from his articles regularly, and a school in Rochester offered an adult-education course built around his work and entitled "Science of Living." By 1931 Dr. McCollum had to admit that, judging from the mass rush to vitamins, "the country has gone wild on the subject of nutrition." Readers growing up during those years may recall the conviction with which their mothers urged them to eat spinach.

Dr. McCollum continued to appear before all sorts of organizations: professional societies (dentists, doctors, and home economists were among his early converts; in his heyday, he estimated that he had probably shaken the hands of three fourths of the sixty-five thousand dentists in this country), church groups, the W.C.T.U., child study associations. A colleague says she's never known him to decline an invitation, no matter how small the group, despite the multitude of demands on his time and energy.

A quotation that appeared frequently in his column may be a clue to Dr. McCollum's crusading zeal. "Take interest, I implore you," said Louis Pasteur, "in these sacred dwellings, Laboratories. Demand that they be multiplied, that they by adorned. These are the temples of the future—temples of well-being and of happiness. There it is that humanity grows greater, stronger, better." Those who know Dr. McCollum best—his wife and his personal friends—believe that he has a truly deep feeling for humanity.

His efforts to reach the public have obviously succeeded. Despite his occasional grumbling about the excesses to which the public has gone, the American diet *has* changed sharply for the better, in the past fifty years; the nutritional propaganda has had effect. Although, in terms of calories, per-capita food consumption has remained relatively unchanged, there has been a marked shift from carbohydrates and bulk foods to milk, meat, and eggs. Similarly, vitamin intake, through proper diet and the food-enrichment program, has increased significantly. Deficiency diseases, particularly in the more advanced countries, are almost unknown.

What Dr. McCollum regards as his major contribution, the biological method, has helped to open vast new areas to basic research. Biochemists, who fifty years ago spent their time analyzing urine and blood specimens, are now studying complex metabolic

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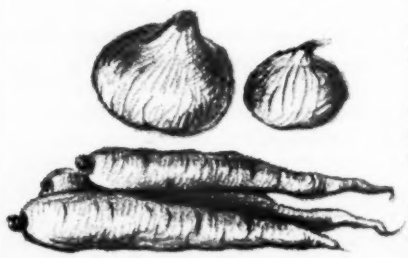
processes at the enzyme level. The answers to today's major diseases—coronaries, cancer, and mental illness—may be found. "Pathological problems will resolve into biochemical problems at the cellular level," Dr. McCollum predicts.

Dr. McCollum has known the fulfillment granted to few pioneers: having his work recognized and honored during his lifetime, and living to see society reap the benefits. Yet in 1944, facing retirement, he was afraid that he might be put on the shelf, forgotten, ignored, unneeded. And what would he do with all his free time?

For years he had balanced a heavy schedule—research (the discovery of Vitamin D was followed by trail-blazing investigations revealing the importance of the inorganic elements, the "trace elements" in nutrition), teaching, and administrative duties at Johns Hopkins; speaking engagements; monthly contributions to *McCall's*; and the family duties of a father of five. In the fifteen years preceding his retirement he had served on a number of committees: the International Vitamin Standards Committee, the U. S. Pharmacopoeia Vitamin Advisory Committee, the National Advisory Health Council, the Pan-American Sanitary Bureau, the National Research Council, the Lend-Lease Administration, and many more. In 1936, as a League of Nations representative, he visited the Soviet Union. (His hearing difficulties started with a strep infection he contracted there).

In the late thirties, he became consultant to the National Dairy Products Research Laboratory, an industrial research organization directed toward basic research with developmental possibilities. Although Dr. McCollum periodically had to protect his research program from those who wanted more applied work done, his judgment was vindicated. Vinegar, paint bases, plastic buttons, poultry feed, dog food, and metal polish—all utilizing waste products of the dairy industry—have been developed. New dairy products, including powdered skim milk and formulas for babies, have resulted. Dr. McCollum recalls with pleasure the Monday-night conferences with his staff at his home—dinner followed by good scientific talk. Last month, at a symposium at the Waldorf, the Borden Company Foundation presented one of its two Centenary Awards (a scroll, a gold medal, and $2,500) to him, in recognition of his contributions to the science of nutrition.



FORTUNATELY the reality of retirement has differed from Dr. McCollum's fearful anticipations. The years have been filled with activity: preparation of his new book, for example, and the establishment of the McCollum-Pratt Institute at Johns Hopkins in 1948, an organization for nutritional and biochemical research financed by a gift from John Lee Pratt, a Johns Hopkins trustee. Dr. McCollum serves on the advisory committee. He is also conducting a research program aimed at the commercial preparation of the important amino acids, several successful methods having already been devised. The research program was supported first by the Rockefeller Foundation and now by the U. S. Public Health Service.

People continue to come to see him. Probably this is what pleases him most. He also takes on an occasional speaking engagement, although, he says, "I'm inclined to a mild attack of palsy when I'm asked about the latest work by young students." His continued attraction for people of all ages was summed up recently by a close associate: "He always made you feel like a person—no matter who you were."

"I MADE MYSELF a promise this morning," he told a visitor not long ago. "After I finish the two articles I am working on now, I'm through with the history of nutrition."

Pointing to a pile of new books, he said, "I want to spend my time thinking about the *new* developments; about the future."

The chimes in Gilman Hall were striking twelve as he closed his office and headed across the Johns Hopkins campus. "I am," he said, "a man who's always liked constructive reverie."

A Johns Hopkins Gazette

AN UNOFFICIAL COMPENDIUM OF FACULTY AND ALUMNI APPOINTMENTS, HONORS, AND ACCOMPLISHMENTS

DEATHS

REGINALD MEYERS ATWATER, M.P.H. '20, DR.P.H. '21; on October 18, 1957. He was executive secretary of the American Public Health Association from 1935 until his death.

CHARLES BAGLEY, JR., G. '11–'12 (pathology), Fellow '16–'17 (psychiatry), associate in experimental neurology '17–'42; on November 2, 1957. He was professor emeritus of neurosurgery at the University of Maryland Medical School, where he had been professor for more than twenty years.

THOMAS GORSUCH CAMPBELL, B.A. '06; on March 25, 1958. He lived in Lutherville, Maryland.

FRANCIS M. CONFER, Medicine '05–'08; on October 22, 1957. He was a retired Chicago stock broker.

FREDERICK AKIN GLASS, M.D. '12; on October 27, 1957. A surgeon in Tulsa, Oklahoma, he was the first chief of staff of St. John's Hospital when it opened there in 1926. In 1947 he was co-founder of the Glass-Nelson Clinic in Tulsa. Dr. Glass was a breeder of fine Jersey cattle and had one of the finest show herds in the United States at one time.

ARDA ALDEN GREEN, M.D. '27, research associate in the McCollum-Pratt Institute; on January 22, 1958. The American Chemical Society had announced just before her death that Dr. Green had been awarded the Garvan Medal as the woman in the United States who had made the most outstanding contribution in the field of chemistry. The award was based on her isolation of the enzyme luciferase, which makes possible the light of the firefly. Dr. Green isolated the enzyme in crystalline form as part of a McCollum-Pratt Institute project directed toward finding how energy derived from the insect's food is transformed into light, and thus also learning how energy produces other actions in living organisms, such as the movement of muscles. Dr. Green had been a research associate in pediatrics at Harvard, a tutor at Radcliffe College, and on the staff of Washington University in St. Louis. At Washington University she worked with Carl and Gerty Cori, Nobel Prize winners in 1947 for their studies of the proteins of muscle.

LEWIS B. HILL, fac. '43–'58, assistant professor of psychiatry; on February 4, 1958. He was psychiatrist-in-chief at the Sheppard and Enoch Pratt Hospital in Towson, Maryland. He had been commissioner of mental health for the State of Massachusetts.

GUY LEROY HUNNER, M.D. '97, house staff '97-02, adjunct professor emeritus of gynecology; on July 14, 1957. A member of the first medical class at Johns Hopkins, he was connected with the institution from the time of his graduation until his death. He became emeritus in 1939. In 1950 Dr. Hunner received the research medal of the Southern Medical Association for his work on diagnosis and treatment of the genito-urinary tract.

S. LLOYD JOHNSON, M.D. '18, M.P.H. '40, DR.P.H. '41; on February 4, 1958. He was a diagnostician and general practitioner in Baltimore.

PAUL A. MCCOY, graduate student in political science; on October 26, 1957. He was in his second year of work toward his doctorate and was a junior instructor in political science.

JAY MCLEAN, M.D. '19, fac. '19–'24 (surgery); on November 14, 1957. While still a medical student at Johns Hopkins, he discovered the anti-coagulant substance heparin. It is widely used in modern heart surgery, during which blood is circulated through an apparatus

CONTINUED ON PAGE 16

PRESIDENT'S HOUSE

WILLIAM MCMILLAN, SMITH AND VEALE, ARCHITECTS

Construction of a campus house for Johns Hopkins presidents began at Homewood last month. Funds for building the house came from an anonymous donor, whose unsolicited gift for the purpose has been added to the proceeds from the sale of an off-campus home used by Johns Hopkins presidents. The house will be on a wooded site at the west end of the botanical gardens, between the Johns Hopkins Club and the University's Greenhouse—the location specified for a presidents' home on the original plans for the campus.

JAZZ ON A SPRING AFTERNOON

In an age when many members of the younger generation give the impression of being totally preoccupied with a music form known as rock and roll, it may come as encouraging news to their elders that for a relaxing of tensions on a spring afternoon, college students choose not r. & r. but good, old, fundamental Jazz. Witness this "Jazz under the Elms" concert and the studious concertgoers at Johns Hopkins. Photographs by Alan J. Bearden.

A Johns Hopkins Gazette

CONTINUED FROM PAGE 13

that by-passes the heart and lungs. Dr. McLean had done research on the clinical use of heparin in acute coronary thrombosis and in gangrene. He also did research in clinical cancer diagnosis and the treatment of tumors. He had been associate professor of research surgery at the Ohio State University Medical College. At the time of his death he was director of the Savannah, Georgia, Tumor Clinic.

I. William Nachlas, B.A. '14, M.D. '18, associate professor of orthopedic surgery; on April 20, 1958. He had been connected with the Johns Hopkins institutions for forty-nine years, from the time he entered the freshman class at the age of fourteen until his death. He had a large private practice and was orthopedic chief at Sinai Hospital and the Levindale Home for Incurables in Baltimore, and was active for thirty years in the Washington County Orthopedic Clinic in Hagerstown. He was a noted experimenter and one of the first to stress the use of penicillin and antibiotics in treating osteomyelitis. A specialist in scoliosis—curvature of the spine—he conducted many experiments in developing the use of metal staples in straightening the spine. He was associate editor of the *Journal of Orthopedic Surgery*. Dr. Nachlas served in both World Wars; during the second he served as a consultant and chief of several general hospitals.

David Moore Robinson, W. H. Collins Vickers professor of archaeology and epigraphy '20–'47, professor emeritus of art and archaeology; on January 2, 1958. He had joined the Johns Hopkins faculty in 1905 and was a member of the active faculty for forty-three years. After his retirement he became professor of classical archaeology at the University of Mississippi. It was his reading about Olynthus in Xenophon that led to his discovery in 1928 of the buried city of Olynthus. Dr. Robinson wrote more than thirty books and hundreds of articles on his work. He was a trustee of the Baltimore Museum of Art and a director of the Johns Hopkins Museum.

Harry Richmond Slack, Jr., M.D. '12, fac. '13–'55, assistant professor emeritus of laryngology and otology; on December 12, 1957. He set up practice in Baltimore as an otolaryngologist in 1919 and had been engaged in practice and research since that time.

Horace Gentry Stewart, M.D. '18; on December 24, 1957. He was in practice in Cincinnati, Ohio, where he was on the staff of Jewish Hospital and Children's Hospital.

Grant Ward, M.D. '21, associate professor of surgery; on February 16, 1958. His connection with the Johns Hopkins School of Medicine faculty began in 1927 and continued until his death. He was surgeon-in-charge of the Hopkins Tumor Clinic. He published nearly one hundred papers on surgery, most dealing with malignancy. He was the co-author of two books; one of them dealt with tumors of the head and neck; the other was *Electrosurgery*. He developed a technique for using electrodes to stop blood flow from vessels severed during an operation.

James W. Wills, B.E. '23; on December 10, 1957. He was president of the Southern Maryland Oil Company and former president and member of the advisory board of the County Trust Company in LaPlata, Maryland. He was a trustee of Physicians' Memorial Hospital and had been a Maryland delegate to several Democratic national conventions.

Aurel Wintner, professor of mathematics; on January 15, 1958. A native of Vienna, he came from Austria to Johns Hopkins in 1930. In 1937 he was a member of the Institute for Advanced Study in Princeton. In 1946 he was promoted to professor of mathematics at Johns Hopkins. Dr. Wintner was once editor of the *American Journal of Mathematics*.

Charles Maurice Wolbert, M.D. '28; on December 3, 1957. He had been an all-Maryland football player and coach at Johns Hopkins and was a retired lieutenant colonel in the Army Medical Corps, where he had specialized in orthopedic surgery. In 1943 he was totally disabled in an operating-room accident at an overseas base hospital.

LACROSSE MELEE

ALAN J. BEARDEN

The Johns Hopkins varsity lacrosse team, undefeated national collegiate champion and co-holder of the 1957 national open lacrosse championship, had, at press time, extended its unbeaten streak to fifteen games. The team has been invited by the British Lacrosse Association to represent the United States in an eight game schedule in England this summer. In the picture above, Emmett Collins makes a save against Loyola. Hopkins won the game by a score of 21 to 3. Three All-Americans are now playing for the team.

At Johns Hopkins

COMMENCEMENT

COMMENCEMENT EXERCISES—Harold Macmillan, British Prime Minister, will deliver the principal address and receive an honorary degree at graduation ceremonies to be held on the Homewood Campus on Tuesday, June 10. Mr. Macmillan will be accompanied to the Johns Hopkins exercises by President Dwight D. Eisenhower.

ALUMNI MEETINGS

ALUMNI HOMECOMING—The program of events on Saturday, May 17, included a symposium moderated by Milton S. Eisenhower and entitled "An Intimate Report on New Developments at Johns Hopkins," a buffet luncheon, float parade, the homecoming day Hopkins-Maryland lacrosse game, and reunion dinners. On Sunday, May 18, the presidents of the regional Johns Hopkins Alumni Associations held their annual meeting on the Homewood Campus.

COLORADO ALUMNI—Milton S. Eisenhower, president of the University, was guest of honor at the Monday, April 14, dinner meeting of the Colorado Alumni Association held at the Brown Palace Hotel in Denver.

ENGINEERING ALUMNI—The annual dinner of the Johns Hopkins Engineers Alumni Association was held on the Homewood Campus on Friday, May 16. John D. Strong, professor of experimental physics, was the speaker.

HOUSTON ALUMNI—Milton S. Eisenhower was guest of honor at the Wednesday, April 23, dinner meeting of the Houston Alumni Association held at the Shamrock Hilton Hotel in Houston.

ILLINOIS ALUMNI—Harold C. Urey, Hopkins faculty '24–'28, Nobel Prize winner in 1934, distinguished service professor of chemistry at the University of Chicago, spoke on "Current Puzzles About the Moon" at the Thursday, May 8, dinner meeting of the Illinois Alumni Association in Chicago.

NORTHERN CALIFORNIA—Milton S. Eisenhower was guest of honor at the Friday, April 18, dinner meeting of the Northern California Alumni Association held at the University Club in San Francisco.

NORTHERN OHIO ALUMNI—Donald H. Andrews, professor of chemistry, spoke on "Science and Space" at the Northern Ohio Association dinner meeting on Wednesday, April 30, held at the Wade Park Manor Hotel in Cleveland.

PHYSICS ALUMNI—A Hopkins Hour was held in Washington on Wednesday, April 30, in conjunction with the meetings of the American Physical Society.

SOUTHERN CALIFORNIA ALUMNI—Milton S. Eisenhower was guest of honor at the Monday, April 21, dinner meeting of the Association held at the Beverly Hills Club.

STATE OF WASHINGTON ALUMNI—Milton S. Eisenhower was guest of honor at the Wednesday, April 16, dinner meeting of the Association held at the Olympic Hotel in Seattle.

UPPER NEW YORK STATE ALUMNI—Charles D. Flagle, director of operations research in the Johns Hopkins Hospital, spoke on the "Operations Research Program at the Johns Hopkins Hospital", at the Thursday, April 24, dinner meeting of the Association held at the University Club in Albany.

FOR THE RECORD

ALBERT SHAW LECTURES IN DIPLOMATIC HISTORY—Gordon Craig, professor of history at Princeton University, delivered, in March, a series of five lectures entitled "From Bismark to Adenauer: Aspects of German Statecraft."

DEICHES LECTURE IN HUMAN RELATIONS—Leslie A. White, professor of anthropology at the University of Michigan, lectured, on Thursday, April 3, on "Energy and the Development of Civilization."

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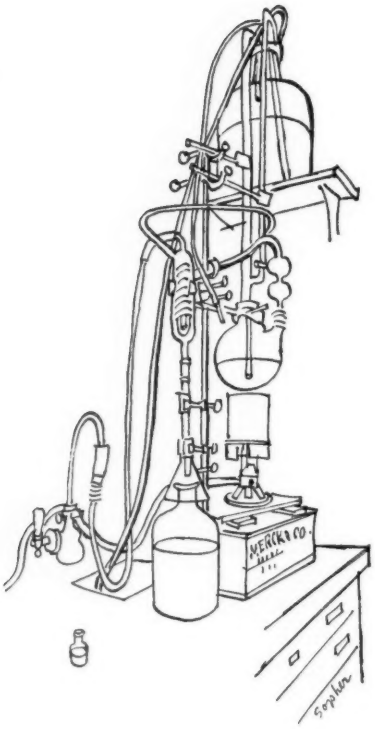

As mankind zooms into the atom age, our privately supported colleges and universities often lack funds to keep abreast . . . the billions needed to help fire the minds of men . . . to bring up leaders worthy of this age of inconceivable power.

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